RD&T TODAY
from research to reality
RESEARCH ■ DEVELOPMENT ■ TECHNOLOGY TRANSFER ■ Wisconsin Department of Transportation
September 2001

Information services key to research success

A 1998 report by the Volpe National Transportation Systems Center documents "how information services help transportation agencies operate more efficiently and effectively." Based on an extensive literature search and interviews with public- and private-sector experts, the report shows that "the value of information can be measured in terms of:

- reduced costs of agency research, technology development and operations
- quicker implementation of innovations and time savings
- more effective decision making at all levels of the agency."

WisDOT/FHWA Library and Information Services Team, l. to r., Minhua Li, Truax Center Research Librarian; Nina McLawhorn, Research Administrator; Jean Trumpy, District 2 Librarian; John Cherney, Hill Farms Head Librarian; Pat Casey, Technical Communications Consultant; Wendy Brand, Hill Farms Reference Librarian; Mark Chandler, FHWA Technology Transfer/Quality Engineer; Daniel Yeh, Office of Public Affairs (not in photo).

Here are just two of several examples of cost savings cited in the Volpe report:

- New York State DOT (NYDOT) estimates life-cycle cost savings of nearly $9 million per year resulting from a new concrete mix for bridge decks that was developed as the result of a literature search.
- In the private sector, Texas Instruments calculated a 515% return on its investment in library services.

WisDOT and partners scan research

At WisDOT and among our partners, awareness is growing of the importance of information services for our research and technology transfer efforts. The Council on Research (COR) within the department and the Wisconsin Highway Research Program (WHRP) at UW-Madison are utilizing information scans and syntheses of existing research. Avoiding duplication and targeting research dollars are major goals.

At the Midwest Regional University Transportation Center (MRUTC), housed at UW-Madison, several research efforts slated for 2002 are aimed at synthesizing the best current thinking on "asset management," the center's primary focus. Another MRUTC project is aimed at establishing a Web-based regional clearinghouse of the best data on deer-vehicle crashes and on promising research for reducing the number and severity of these crashes.

Information services are also applicable once research is completed—to summarize and disseminate the results and place them in context with other information. This helps clarify the relationship of the research to agency problems and objectives. With concise summaries of new technologies and practices, WisDOT managers can hasten innovation, save money and improve services for customers.

Library and Information Services Team

To support and encourage efforts such as these in Wisconsin, a new partnership effort has been launched—the WisDOT/FHWA Library and Information Services Team. Its mission is to provide targeted information services and training to all who are interested in accessing transportation information more effectively. Current members of the team are shown above in the 8th floor Library at the Hill Farms State Transportation Building in Madison. For examples of how the team can help, see *Information services in action* on page 3.

IN THIS ISSUE

Research Coordination Section

RD&T TODAY is published by the Research Coordination Section, Division of Transportation Infrastructure Development, Wisconsin Department of Transportation.

Our goals include helping identify needed transportation research not previously carried out by others, monitoring research in progress and facilitating implementation of results into practice.

This three-step process of research, development and technology transfer (RD&T) is at the core of all of our activities.

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The amount of information available on every conceivable transportation topic is vast and growing. In this issue of ***RD&T TODAY,*** we feature the importance of library and information services. We are fortunate at WisDOT to have the services of skilled information specialists to help us mine the rich resource of existing technical information.

Nina McLawhorn

Research Administrator

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As a guide to research conducted here in Wisconsin, we recently published ***Wisconsin Transportation Research—Foundations for the Future.*** This report is a summary of our partnership efforts during the past four years, including summaries of 65 research projects. Shorter one-year versions of this annual report will be published each January. We hope it will serve as a convenient reference for information on research projects, investigators and WisDOT contacts.

You can review the report online at *http://www.dot.state.wi.us/ dtid/research/,* or call the Research Coordination Section at 608-261-8198 for a hard copy.

Regional and national transportation research continues to grow in importance, reflecting the successes of partnership efforts such as the National Cooperative Highway Research Program (NCHRP) and pooled fund projects. WisDOT's contribution to national and regional research efforts now represents nearly half of the annual research budget from State Planning and Research (SPR) funds.

In this issue, we update you on Wisconsin's role in the Midwest States Smart Work Zone Deployment Initiative (MwSWZDI) and on recently funded projects for "managing change," a priority of CEOs of state DOTs. We also spotlight eight NCHRP projects funded for fiscal year 2002 that are top priorities of WisDOT managers.

WisDOT was pleased to host Transportation Research Board (TRB) representative Jay Jayaprakash June 20 and 21 here in Madison. He had an opportunity to visit with WisDOT and university staff, to tour the lab facilities at Truax and UW-Madison and to hear summaries of current Wisconsin research.

We look forward to working even more closely with TRB in the coming years as its leadership continues to tailor programs such as NCHRP to the needs of state DOTs.

The Midwest Regional University Transportation Center at UW-Madison is hosting a national workshop on "Taking the Next Step in Asset Management" September 23-25. It's not too late to sign up for this outstanding program, featuring experts on this important topic from throughout the country. See page 12 for details.

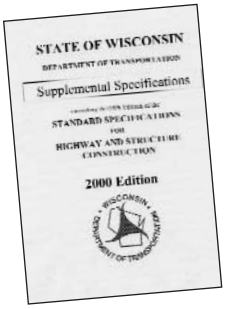
Check the WisDOT Research Coordination Section Web site at *www.dot.state.wi.us/dtid/research* for recent information, and please contact me with your suggestions for improving our research programs.

Nina McLawhorn

Information services in action

Recent research a phone call or e-mail away

John Voorhees, District 1 storm water engineer, was working on WisDOT's new dust control specification a few months ago and wanted background information on the subject. He also wanted to review recent water quality studies related to highway runoff to assist the TRANS 401 workgroup that is revising the storm water and erosion control rule.

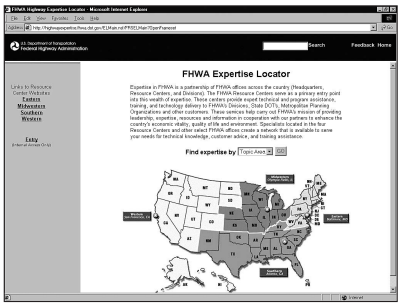


Voorhees e-mailed WisDOT Librarian John Cherney, *library@dot.state.wi.us*, with his requests, hoping there might be some useful information out there. After an Internet literature search, Cherney used the Interlibrary loan service to acquire some hard-to-find items and forwarded them on to Voorhees. The information "will be extremely helpful," Voorhees e-mailed back. "In addition, you got it to me in a timely manner!"

Contact John Cherney at *library@dot.state.wi.us.*

Mining the wealth of libraries and the Internet

"A little time and a little patience is all it takes," according to Mark Chandler, technology transfer engineer for the Federal Highway Administration (FHWA) Wisconsin Division. "Start searching a few resources and you'll be amazed at what you find."



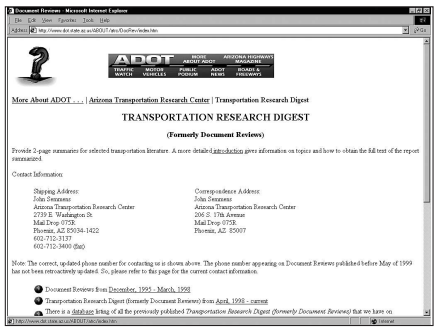
Chandler carried this message to seven of WisDOT's eight district offices early this summer while accompanying staff from the Bureau of Highway Construction's Technology Advancement Unit on their annual visits. He reviewed for district office research contacts his extensive compilation of "Library and Web-based Information Sources" that includes more than 100 links. A hypertext version of his report is available on the WisDOT Library Web site at *http://dotnet/dotlibrary/*.

Chandler also called attention to FHWA's Expertise Locator at *http://highwayexpertise.fhwa.dot.gov/*. Agency specialists in hundreds of topic areas—from civil rights, engineering and highway safety to management, marketing and traffic operations—can be contacted for technical information or assistance.

Contact Mark Chandler at *chandler@fhwa.dot.govs*

Using other states' services

Research Librarian Minhua Li is always on the lookout for information tools to use in assisting staff at the WisDOT Truax Center. After identifying pertinent research reports and abstracts for her customers, she also offers them the benefit of a two-page review of the report—a little more in depth than the abstract but far shorter than the entire report—courtesy of the Arizona Transportation Research Center at *http://www.dot.state.az.us/ABOUT/atrc/DocRev/index.htm.*



"When I saw that Arizona was putting these reviews on its Web site," Li comments, "I thought it would be a quick way to get an overview of a research report." Recent research reports (since 1998) can be searched by date, subject, keyword or transportation mode. The two-page summary includes bulleted highlights and Web links when appropriate.

Contact Minhua Li at *minhua.li@dot.state.wi.us.*

Value engineering for the Marquette Interchange

District 2 Librarian Jean Trumpy uses whatever resources she needs to serve her customers—frequently partnering with the UW-Waukesha Library and other state libraries. When asked for recent information on value engineering for large projects (applicable to reconstruction of the Marquette Interchange), she quickly secured and delivered to District 2 engineers several research reports and journal articles containing pertinent information.

"Articles from specialized journals, such as *Transportation,* an international publication, and *Transportation Quarterly* were turning up so frequently in my information searches that we recently subscribed to them," Trumpy says. "Having the journals here in the library means we can get relevant articles to our customers in a more timely manner."

Contact Jean Trumpy at *jean.trumpy@dot.state.wi.us.*

Internet searches

Scan, analyze, synthesize

by Pat Casey

The availability of information on the Internet has opened up a world of resources to anyone with a computer and modem. Many of us already browse Internet Web sites and use search engines; but we are frequently overwhelmed with the sheer number of search results.

While general search engines like "Google" and "AltaVista," may sometimes be helpful, it's usually more effective to target a search on specialized transportation databases. Here are a few places to start and a few suggestions for scanning, analyzing and synthesizing research on a transportation topic.

Consult with your WisDOT librarian for other transportation-specific Internet resources and for in-depth assistance in refining your search and assembling the results.

Search transportation databases

TRIS Online (Transportation Research Information Services) at *http://199.79.179.82/sundev/search.cfm* is the best place to start when looking for books, research reports, journal articles and Web sites specifically related to transportation topics.

For very recent transportation research that is still under way, search the Transportation Research Board's (TRB) Research in Progress database at *http://trbrip.tamu.edu/*.

Another resource is one or more of TRB's 230 technical committees. You can find a TRB committee that studies almost any transportation topic by searching *http://nationalacademies.org/trb/ftp/directory/mem_finder.html*.

About 70 of the TRB committees now have their own websites, which can be accessed at *http://www4.nationalacademies.org/trb/directory.nsf/web/committee_homepages*.

Note: These and other transportation resources are listed on the WisDOT Research Coordination Section Web site at *http://dotnet/dtidadmin/oas/research/* (for WisDOT employees) or at *http://www.dot.state.wi.us/dtid/research/* (for WisDOT partners).

Scan titles and abstracts

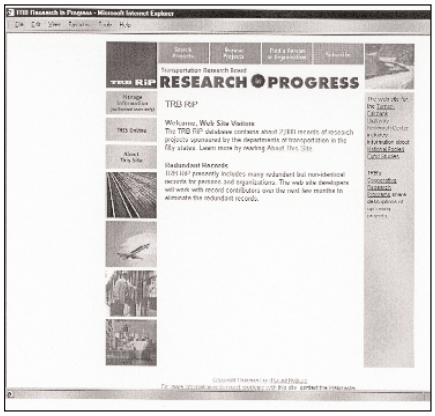
When searching a database for potential information on a specific transportation topic, quickly review the titles and abstracts returned from your search. Then identify those books, reports, articles, experts or Web sites that look most promising for your needs. Keep in mind both the critical information you need as well as the background and context of the issue.

A few tips when scanning search results:

- Keep an eye out for meta-sources—inventories or syntheses of information.
- Look for recurring authors, research centers, government agencies and consulting companies.
- Look for information sources dedicated specifically to your topic—such as trade journals, dedicated Web sites or online discussion groups.
- Note the item's date; recent is usually better.

Prioritize search results

Once you've identified a range of potential resources, prioritize them based on their pertinence to your topic and their apparent quality (current best thinking, well-documented, clearly written). This is best done with other technical experts, for example members of a technical panel responsible for scoping a research project. Combine everyone's input as to which resources merit detailed analysis. Depending on the size of your initial list of resources, you may only zero in on a small percentage of the total.



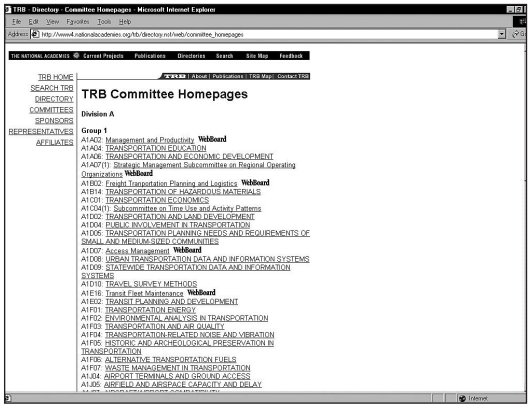
Next, digest the abstracts or executive summaries of the top items —or the entire item, if it's a journal article or brief report—and write a concise, one-paragraph summary of each resource. Highlight its value to solving the problem you started with.

Synthesize the best information

One of TRB's descriptions of an information synthesis is "a collection of information thoughtfully organized into a concise document that describes current practice." The more thought you give to distilling the best results of your search, the more concise and organized the synthesis will be.

The synthesis should be readily understood by transportation managers or other personnel unfamiliar with the particular technology. Use clear, everyday English. Avoid technical jargon and acronyms.

Use a logical outline for the synthesis that can be easily followed, such as the one below that is adapted from "Tips for Writing an Executive Summary," published by WisDOT's Office of Public Affairs. Put tables, lists, figures and compiled data in appendixes at the end of the synthesis and refer to them where appropriate in the synthesis itself.



Summary—Identify the topic searched, what was found, what it means and any next steps

Background—Establish the context of the problem, why it's important and what solving it will mean—savings in time or money, improved quality, more satisfied customers.

Search Process—Describe the search methods used, number and type of items found, most useful meta-sources and outstanding reports or websites.

Results—What did the search reveal? Is there a consensus or divided opinion? Can you extract a list of best practices? Are there information gaps that need new research or a repackaging of existing research (manual, guide, training)?

Recommendations/Implementation—What are the next steps? Who will be responsible? How will the results of the search be communicated and to whom?

Better decisions and faster innovation

Information searches can be cursory or thorough. But whatever time is spent carefully searching for existing information and best practices—and clearly communicating the results—will be time well invested. The payoff will be better decisions and faster innovation.

Your WisDOT librarians and information specialists stand ready to help.

Contact Pat Casey at *pat.casey@dot.state.wi.us.*

Accessing international transportation information resources worldwide

More than 400 transportation professionals from 55 countries gathered in St. Petersburg, Florida in July 2001 to share strategies for accessing transportation information and transferring technology. Both Local Technical Assistance Program (LTAP) personnel and transportation librarians and information specialists participated in workshops and seminars during combined conferences.

Sponsors of the overall symposium were:

- Federal Highway Administration (FHWA)
- Transportation Research Board (TRB)
- Bureau of Transportation Statistics (BTS)
- American Association of State Highway and Transportation Officials (AASHTO)
- World Road Association (PIARC)
- Organization for Economic Cooperation and Development (OECD)/International Transport Research Documentation (ITRD)
- Special Libraries Association/Transportation Division (SLA)

Speakers and panelists repeatedly emphasized the growing importance for transportation agencies of timely access to and dissemination of recent technical information. In a session on "knowledge management," moderated by Minnesota Department of Transportation Librarian Jerry Baldwin, corporate presenters expressed a similar need in the private sector, describing some of their companies' strategies for sharing technical skills and new technologies.

Here are comments from Wisconsin conference attendees:

"I was pleased by the strong showing of Midwestern transportation information professionals. WisDOT's research and library staff have an unprecedented opportunity to strengthen area partnerships. Fostering these relationships will make the Upper Midwest one of the most robust transportation information regions in the world."

— ***John Cherney,*** *WisDOT Head Librarian*

"This conference was a great opportunity for LTAP center staffs to get an update on the national LTAP program and to share ideas, demonstrate new products, and explore ways that we can work with each other and our partners to become more effective. The pre-conference seminar, LTAP 101, provided Ben Jordan, an engineer new to TIC, a good introduction to the national LTAP program and its resources."

— ***Steve Pudloski,*** *Program Director, UW-Madison, Wisconsin Transportation Information Center (TIC)*

"As a person new to LTAP, the conference provided me with a good orientation to the program and an opportunity to network with peers from other states. Technical assistance providers sometimes face similar problems, and understanding past practices is helpful as potential solutions are considered. The contacts I formed at the meeting will be valuable as I move forward with my LTAP work."

— ***Scott Bush,*** *WisDOT Leader Local Road Policy and Process Team*

"I was struck by the international scope of the challenges being faced by transportation departments. DOTs in Europe, Latin America and Australia are all looking for faster ways to innovate and get new technologies and practices in place."

— ***Pat Casey***
WisDOT Research Section Technical Communications Consultant

Early results of DSP stress study

by Linda Keegan

Anecdotal information indicates that sworn law enforcement personnel throughout the country experience high levels of job stress. To gain a better understanding of the occupational stress levels among Wisconsin Division of State Patrol (DSP) sworn personnel, the WisDOT Council on Research (COR) funded a $60,000 study in fiscal year 2001 (0092-01-07.) The study will also address ways to improve overall health, work productivity and ways of doing business in DSP.

A survey aimed at objectively documenting stress and its effects, had a response rate of 68% (362 of 530 surveys were returned from sworn personnel.) Some of the findings include:

- 51% of DSP sworn personnel report high levels of stress, particularly among troopers and upper management.
- Sworn personnel with more than five years service or over age 40 report a higher level of stress compared to younger sworn personnel or those with less experience.
- Contributors to stress cited by respondents included superiors second-guessing their actions, danger on the job, shift work, paperwork and a combination of too many pressures.

Findings so far also show that sworn personnel in different job categories experience different stresses and react differently to them. Stress reduction programs, to be explored later in the study, should incorporate individualized plans to address these differences.

For more information, contact Technical Oversight Committee member Connie Hultman at *connie.hultman@dot.state.wi.us*.

Studying innovative soil stabilization techniques

by Aileen Switzer

Wisconsin Highway Research Program
WHRP

UW-Madison Professors Tuncer Edil and Craig Benson are in the midst of two research projects anticipated to result in environmentally safe and cost-effective roadbed construction techniques for soil stabilization. Results from the two projects (0092-45-15 and 0092-45-18) are expected early in 2002.

In the first project, at the Scenic Edge development in Cross Plains, investigators are looking at cost-effective ways to stabilize wet soil using fly ash, a by-product of coal burning. Traditionally, road contractors stabilize wet soil by removing it and replacing it with crushed rock, a costly and time consuming process. The alternative of mixing fly ash with the wet soil is less costly and also keeps the fly ash out of landfills.

Measuring groundwater impacts

A potential drawback is that fly ash contains some heavy metals and other chemicals. To date, the impact of these components on groundwater has not been studied. As part of its efforts, the UW research team is studying what impact fly ash will have on groundwater. The project will provide a measure of its effect over a long period of time.

"An objective of this research is to show that this method of construction is safe and effective," said Benson. "We hope that fly ash will be used more frequently because of its advantages. If we can stabilize the soil with fly ash, it saves money and natural

Drain tube (left), rolled geomembrane (center) and drainage mat (right) used in construction of the water collection basin under the roadway.

"An objective of this research is to show that this method of construction is safe and effective. If we can stabilize the soil with fly ash, it saves money and natural resources . . . and prevents it from being placed in a landfill."

— UW–Madison Professor Craig Benson

Excavation of water collection basin for chemical analysis of samples. ▶

Placement of the geocomposite drainage mat over the polyethylene geomembrane prior to covering the roadbed with a mixture of fly ash and soil. ▼

"This experiment will help us develop construction guidelines and specifications so highway engineers know what technical performance to expect from these products," said Edil. "They can use this information along with an economic analysis and decide which of these materials can best aid them in the construction of new highways. We will determine the equivalency of a smorgasbord of soft subgrade stabilization options."

Partners in research

Both projects fulfill the mission of the Wisconsin Highway Research Program (WHRP) by including sponsorship from a variety of transportation stakeholders—the Wisconsin Department of Transportation, the Wisconsin Department of Natural Resources, industrial by-product producers (Alliant Energy, Xcel Energy, Mineral Solutions and Grede Foundries) and geosynthetics manufacturers (Presto, Tenax and Amoco).

This research is expected to benefit all involved. For companies like Presto, the university offers an unbiased testing and evaluation center that will provide credible evidence related to their product. The university, in turn, has the opportunity to conduct research on state-of-the-art materials and practices that increase opportunities to educate students.

> ***"We will determine the equivalency of a smorgasbord of soft subgrade stabilization options."***
>
> — UW–Madison Professor Tuncer Edil

resources. Using fly ash also prevents it from being placed in a landfill."

The team is also experimenting with several other ways to stabilize soft, muddy clay subgrade on a 4,000-foot segment of WIS 60 near Lodi. The project includes experimenting with bottom ash and two other byproducts—foundry slag and foundry sand—as subbase materials. Geosynthetic fabrics that reinforce soil will also be tested.

Results of the university's efforts are expected to offer WisDOT important knowledge for building safer, stronger roads for travelers, as well as offer state foundry and power industries a beneficial use for their by-products. Once results are in, the research team will disseminate them through reports and manuals, as well as by conducting training sessions and workshops.

> ***. . . the university offers companies an unbiased testing and evaluation center . . .***

For more information, contact Dr. Tuncer Edil at *edil@engr.wisc.edu* or Dr. Craig Benson at *benson@engr.wisc.edu*.

Pooled fund effort is making work zones safer

Wisconsin is leading four studies this summer of promising new operations technologies for making highway work zones safer. The work by WisDOT, in cooperation with investigators at UW-Milwaukee and Marquette University, is part of a $682,000 regional pooled fund effort for 2001.

Begun in 1999, the Midwest States Smart Work Zone Deployment Initiative (MwSWZDI) now includes the following DOTs and universities:

Iowa	Iowa State University
Kansas	University of Kansas
Missouri	University of Missouri-Columbia
Nebraska	University of Nebraska-Lincoln
Wisconsin	UW-Milwaukee; Marquette University

L. to r. Marquette University graduate student Georgia Vergou, Professor Alex Drakopoulos, and WisDOT investigator Tom Notbohm.

The five states in the MwSWZDI consortium have selected 18 deployments of 15 technologies for evaluation this year, with completion scheduled for May 31, 2002. Wisconsin's Technical Committee member is Tom Notbohm, work zone traffic control engineer for WisDOT's Bureau of Highway Operations. Participating investigators are Marquette University Professor Alex Drakopoulos and UW–Milwaukee Professor Alan Horowitz.

Details and reports are available on the MwSWZDI Web site at the University of Nebraska-Lincoln:
www.matc.unl.edu/research/MwSWZDI/

Mobile Me/You speed displays

Preliminary tests of a new application for radar-based speed display boards show promise, according to WisDOT's Tom Notbohm. "This is the first time speed displays have been tested on a moving vehicle. We're hoping the dual signs will let drivers see how fast they're approaching compared to the maintenance vehicle and then slow down."

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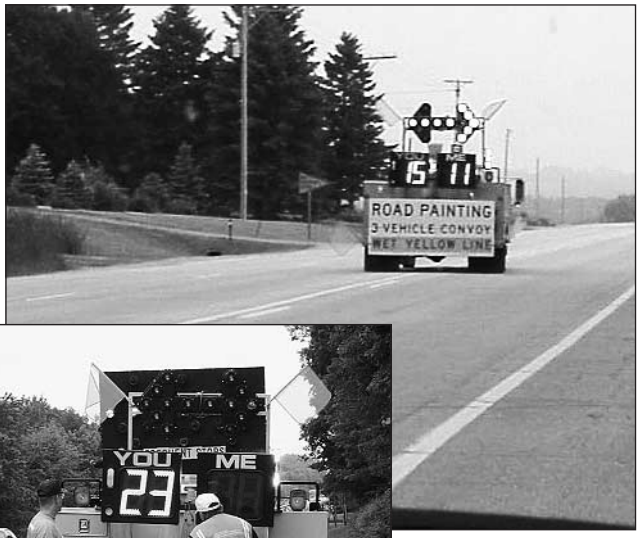
— WisDOT's Tom Notbohm

Designed to provide real time, continuous information on the maintenance vehicle's speed and that of the approaching vehicle, the twin display boards were developed by Speed Measurement Laboratories, Inc., *www.speedlabs.com/*, an independent field testing organization that evaluates radar and laser technologies. Investigators collected speed data on vehicles as they approached paint crews both with and without use of the mobile speed displays in order to measure the displays' effectiveness in slowing traffic.



Vehicle-mounted rollup warning sign

Designed to mount on a vehicle performing pavement marking or other mobile maintenance operation, rollup signs can be deployed when needed, then stowed for transport. Four different crews will evaluate the rollup signs and the vehicle mounting system developed by Lang Products International of Inver Grove Heights, Minnesota. The sign system will be evaluated based on ease of installation and operation, durability, lack of interference with the vehicle's operation and subjective perceptions of safety/visibility.

Travel Time Prediction System

TIPS (Travel Time Prediction System) is a portable automated system for predicting and displaying travel time for motorists in advance of and through work zones, on a real-time basis. It collects real-time traffic flow data using roadside non-contact (microwave) sensors, processes the data in an on-site personal computer, computes estimated travel time between different points on the freeway and the end of the work zone, and displays this information on portable, electronic message signs along the freeway.

Wisconsin will be the second state in the nation to try TIPS, developed by PDP Associates of Cincinnati, Ohio, *www.pptips.com*. Testing will take place this summer in Racine County as part of the $16.6 million repaving job along I-94 from the Milwaukee County line to the Kenosha County line. "We hope drivers will use the information on the message boards to make decisions about alternate routes—potentially easing congestion near the work zones as well as reducing travel time," says Notbohm. "We'll be interested in accuracy of the system and its reliability in bad weather, as well as overall effectiveness diverting traffic and reducing crashes."

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— WisDOT's Tom Notbohm

Temporary rumble strips

Pre-formed rumble strips developed by Swarco Industries of Columbia, Tennessee, *www.swarco.com*, are being tested by WisDOT in Dodge County. The strips were applied with adhesive ahead of a temporary traffic signal on a two-lane rural state trunk highway (WIS 26) where it intersects County E. "We will measure traffic speeds both before and after the rumble strips are installed," said Marquette University Professor Alex Drakopoulos. "We will also evaluate the strips for durability, ease of application and removal, and effectiveness at producing audible and tactile messages as compared to conventional rumble strips."

Contact Tom Notbohm at
thomas.notbohm@dot.state.wi.us

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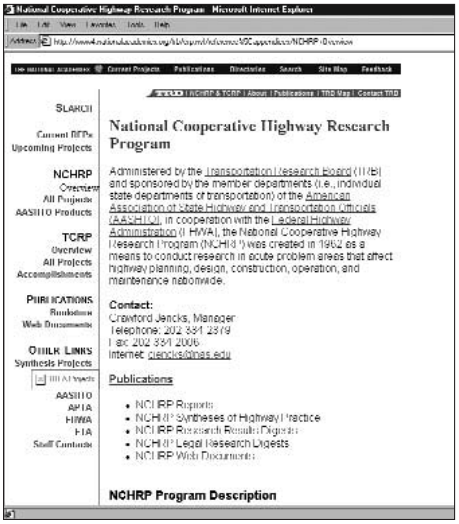
— Marquette Professor Alex Drakopoulos

WisDOT managers eye national projects

by Linda Keegan

At least eight research projects on the national level will be on WisDOT's radar screen in the coming year, reflecting high ratings given to them by WisDOT managers. The eight are among 63 new and continuing projects selected to receive $23.6 million in funding for fiscal year 2002 through the National Cooperative Highway Research Program (NCHRP).



"These projects offer a major return on our investment," according to Nina McLawhorn, WisDOT Research Administrator. "We contribute funds annually to NCHRP efforts, so we're interested in the results they produce. We plan to monitor their progress and publish periodic updates."

Member departments of the American Association of State Highway and Transportation Departments (AASHTO) sponsor the NCHRP program in cooperation with the Federal Highway Administration (FHWA). Staff of the Transportation Research Board (TRB) administer the program, which is aimed at responding to applied research needs of state DOTs.

The projects of particular interest to WisDOT are:

Research for AASHTO Standing Committee on Planning: Support for Improved Transportation Planning and Project Development

Project No. 08-36 *$600,000 (continuing)*

The objective of this project is to establish a flexible, ongoing program of quick-response research designed to develop improvements to the analytical methods, decision-support tools, procedures and techniques employed by practitioners in statewide and metropolitan transportation planning, programming and development.

Research for AASHTO Standing Committee on Highways

Project No. 20-07 *$600,000 (continuing)*

The AASHTO Standing Committee on Highways is continually called on to rule on planning and design policies and standards as a guide for state highway and transportation departments. Funding under this project produces information useful in the establishment of these policies and procedures, with 145 tasks either completed or currently underway.

Highway Research and Technology – International Information Sharing

Project No. 20-36 *$648,000 (continuing)*

This project provides support for state participation in international highway research and technology programs and for activities recommended by the AASHTO Special Committee on International Activity Coordination. Examples of past projects include a workshop on context-sensitive geometric design, the evaluation of an innovative use of lighting at crosswalks to enhance pedestrian safety and the establishment of a working group to review innovative right-of-way procedures.

Freight Movement by Rail – Impacts and Opportunities

Project No. 08-42 *$450,000 (new)*

The interaction between rail and other modes continues to be an important issue. On the one hand, efficiency and safety concerns have led to a decline in rail freight movement. On the other hand, congestion and air-quality concerns from increasing truck traffic have caused planners to give rail a second look. There is a need to analyze the impacts and opportunities of moving freight by rail.

Methods for Forecasting Statewide Freight Movements and Related Performance Measures

Project No. 08-43 *$500,000 (new)*

The volume of freight movement within the United States has risen rapidly over the past three decades. This increased activity, along with other trends, places a growing pressure on transportation infrastructure and leads to costly traffic congestion, notably around major airports, seaports and truck-rail transfer terminals. This project will develop analytic methods to assist states in the development of performance measures to gauge how well their transportation systems are meeting the needs of state and local economies, with a focus on goods movements.

Incorporating Safety into Long-Range Transportation and Land-Use Plans

Project No. 08-44 *$500,000 (new)*

The long-range transportation planning process, both at the state and local levels, needs better predictive tools to identify future safety deficiencies and methods to address those deficiencies. This research is aimed at reviewing existing methods of predicting future safety deficiencies, developing the most effective countermeasures to address deficiencies, and evaluating land-use decisions and development patterns that will enhance personal safety of pedestrians, among other tasks.

A Collaborative Vision of Mobility: Updating the Toolbox

Project No. 08-45 *$150,000 (new)*

Currently, innovations in information and communication technology promise more flexible and responsive tools for enhancing mobility. However, the need still exists for a comprehensive multi-modal analysis of existing practices to identify and measure whether sufficient knowledge and experience have been gained through intelligent transportation systems (ITS), land-use policy and other management strategies to sustain mobility in the face of growth.

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Managing change in state DOTs

by Linda Keegan

The ideas were planted a year ago in Minneapolis when WisDOT Secretary Terry Mulcahy and leaders from 35 other state DOTs met to talk about the challenges of dealing with change in their organizations. This spring, after a review of eight information searches ("topic scans") that emerged from the meeting, the following research projects were adopted by the National Cooperative Highway Research Program (NCHRP).

> *"I will be very interested in seeing the results of this research. Change is upon us. Let's deal with it intelligently and proactively."*
>
> — WisDOT Secretary Terry Mulcahy

"I will be very interested in seeing the results of this research," Secretary Mulcahy said. "Change is upon us. Let's deal with it intelligently and proactively."

Outsourcing of State-DOT Delivery of Capitol Programs

$100,00

Although a considerable amount of outsourcing is ongoing, outsourcing management of capital program delivery—including project development and asset (i.e., maintenance) management—is relatively new to DOTs. More data is needed to evaluate the actual results achieved. Best practices by DOTs need to be identified as part of a comprehensive study.

How State DOTs Can Learn to Thrive in an E-Business Environment

$150,000

Some state DOTs are beginning to use e-business to communicate information about their activities and to provide products and services over the Internet to customers, suppliers and other DOTs. Research is needed to review how other organizations are using e-business approaches, to understand which of the many DOT functions can take most advantage of the potential benefits of e-business, to clarify the pros and cons of e-business particularly for state DOTs and to recommend a step-by-step transition approach for DOTs to move in this new direction.

Best Practices in Partnering with Public Resource Agencies

$50,000

Public-public partnerships appear to provide valuable opportunities for streamlining environmental activities across agency and jurisdictional lines. A summary of best practices of partnering relationships statewide and nationally between DOTs and environmental resource agencies will be prepared. Successful examples will be highlighted.

Transportation Outcomes and Other Strategic Performance Impact Measures: A Framework for State Transportation Departments

$100,000

A survey of DOTs will be conducted to identify performance measures used for strategic management or long-range system planning and to assess transportation, economic development and environmental impacts. Telephone interviews and a review of materials forwarded by DOTs will follow. Research also will include inquiries into the use of customer feedback and market research techniques, such as surveys, interviews, focus groups, advisory committees, response cards, kiosks, and Internet applications.

Characteristics of the 21st Century Operations-Oriented State DOT

$100,000

The goal of this research is to support the facilitation of institutional change in state DOTs towards an increased commitment to real time operation of the existing transportation system for maximum performance. The research will (a) identify the objectives associated with an increased state DOT orientation to systems operations and management; (b) describe the necessary preconditions to this orientation; (c) clarify the principal challenges/barriers to needed transitions; (d) suggest potential alternative models; (e) identify supportive activities by AASHTO and other associations and other levels of government and stakeholders.

For more information, visit the NCHRP web site at *http://www4.nationalacademies.org/trb/crp.nsf/*

National projects

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An updated "toolbox" will provide state and local transportation agencies with integrated strategies for balancing capacity development with demand and system management.

Analytic Tools Supporting Transportation Asset Management

Project No. 20-57 *$750,000 (new)*

The objective of this research is to develop a set of simplified analytic tools for state DOTs and other transportation agencies that: (1) promote better asset management; (2) can be adapted for use with existing management systems to provide additional decision-support capabilities; and (3) provide a quick, low-cost, low-risk way of strengthening an agency's analytic toolbox for identifying, recommending and evaluating investment decisions.

For more information, visit the NCHRP web site at *http://www4.nationalacademies.org/trb/crp.nsf/*

Taking the next step in asset management

The Midwest Regional University Transportation Center (MRUTC) is hosting the

4th National Transportation Asset Management Workshop

Madison, Wisconsin

September 23-25, 2001

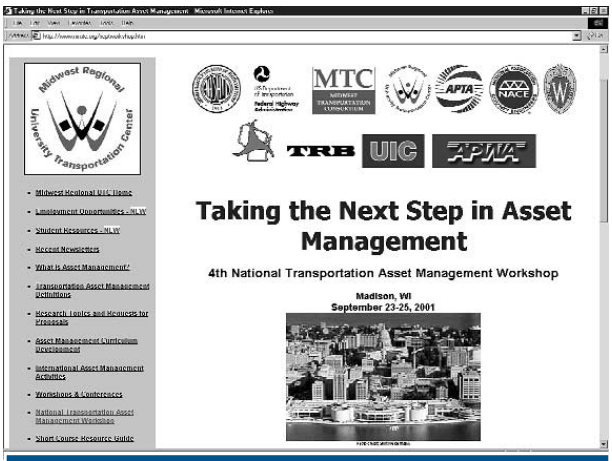
Take the next step by hearing the . . .

- Latest findings of AASHTO and TRB transportation asset management task forces
- Practical lessons from city, county, state and transit agencies
- Agenda for research and educational curricula in transportation asset management

Learn how to . . .

- Establish goals and performance measures
- Plan and implement an asset management program for pavements, bridges, rolling stock and heavy equipment

For registration information:



www.mrutc.org/workshop

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